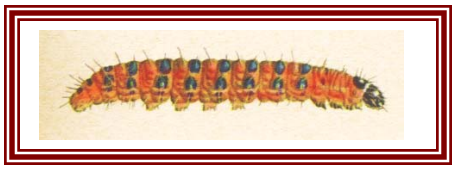
Cactoblastis cactorum Activities Report for September 2006





For past reports and more information, see the PPQ Cactus Moth website at: http://www.aphis.usda.gov/ppq/ep/emerging_pests/cactoblastis/index.html

Joel Floyd, USDA-APHIS-PPQ-EDP, Riverdale, MD

REARING REVIEW: The expert review report of the rearing operations at the ARS Tifton, GA lab was completed. This was the result of a workshop and review conducted in July. Some of the recommendations are already being tested or implemented.

MEXICAN DETECTION: On August 11, 2006, a detection in Mexico of *Cactoblastis cactorum*, was reported on the island of Isla Mujeres, a part of the state of Quintana Roo off the Yucatan Peninsula by the Plant Health Directorate (DGSV) of Secretería de Agricultura, Ganadería, Desarrollo, Rural, Pesca y Alimentación (SAGARPA). It is the first detection in Mexico, reported as part of an on-going national monitoring program for the detection of this pest.

Helmuth Zimmermann, consultant from South Africa and *C. cactorum* expert, visited Isla Mujeres in early September consulting with SAGARPA representatives making assessments and recommendations. In late September, ARS scientists Stephen Hight and Jim Carpenter visited Isla Mujeres, Mexico to observe the infestation there, review eradication activities, and deploy traps baited with experimental lure on the island and along the coast. Agustin Ramos from the APHIS International Services office in Mexico City was there to translate. They provided training on adult non-target Lepidoptera identification a SAGARPA entomologist. Visits were made to the Yucatan Coast were traps were placed. Still no other infestations are known outside of Isla Mujeres in Mexico.

SURVEY: Richard Brown identified moths in traps sent from Arizona, Mississippi, and Texas. All were negative for cactus moth. Two native species of larvae were reared from Opuntia cactus collected in Texas, with one species representing a new host record for a family of moths. New sentinel sites were added in Texas. Host mapping continued in Mississippi, Louisiana, Texas, New Mexico, and Arizona.

REGULATION. The domestic regulation draft docket was forwarded for legal review by the Office of General Council. A summary of the existing regulations and the changes under consideration can be found on the PPQ Cactus moth pest alert website found at: http://www.aphis.usda.gov/ppq/ep/emerging_pests/cactoblastis/regulations.html

PPQ FIELD ACTIVITY: Maurice Duffel continued his TDY from the Citrus Canker program along with other program workers, Jason Jones and Kris Hartzer to work with Stephen Hight in Ft. Morgan and Bon Secour making checking traps, replacing lure, and making sterile releases. They removed and destroyed over 3 tons of infested host material and collected egg sticks. Craig Hinton, of the CPHST Gulfport Lab has continued to help Stephen Hight with trapping and host removal at Dauphin Island and Little Dauphin Island, Alabama.

TECHNICAL LIAISON. Stephanie Bloem set up, facilitated, and translated a conference call with SAGARPA representatives and ARS regarding the visit to Mexico by ARS scientists Stephen Hight and Jim Carpenter. She also collected and compiled all reports for September program activities.

Stephen Hight, USDA-ARS-CMAVE Tallahassee, FL
Jim Carpenter, USDA-ARS-CPMRU, Tifton, GA
NO REPORT SUBMITTED FOR SEPTEMBER

S. Dorn, M. Sarvary, ETH Zurich, Switzerland

Studies on Dispersal Ability

1 The tethering method has been finalized for attaching cactus moth adults to the flight mill. Each moth is attached to the flight mill using a thin paper strip glued to the ventral side of its abdomen.
2 Experiments on the actograph are being carried out simultaneously with the flight mill trials using 40mm x 40mm plastic cylinders in which moths are capable of flight.
3 Pupal shipments arrive every week on Monday and moths are set up immediately in the growth chambers. Adult emergence continues to be greater than 70% with fewer than 5% of the adults emerging with crumpled wings.
4 Rearing equipment was purchased and received from Bio-Serv (Frenchtown, NJ, USA) and moths are now being maintained individually. This allows "weight" to be added to the model as a factor.
5 Experiments were initiated using both the actograph and flight mill to determine the time(s) of day/night when cactus moths are most active.

R. Heath, N. Epsky, USDA-ARS-SHRS Laboratory, Miami, Florida

Accomplishments and activities: Three shipments (9/6, 9/12 & 9/26) of cactus moth pupae were received from Tifton. One set of gland extracts was obtained, which consisted of 19 glands. Problems with the GC-MS continued and we were unable to run any samples. Repair activities continued. A new GC-MS has been ordered and should be delivered in October. Chemical analyses will be conducted when either the old GC-MS is functional or when the new GC-MS is available. Sample has been stored in an ultra-low freezer until GC-MS is available for analysis. Data were obtained on eclosion rates from the cactus moth shipments and are given below.

	Mean eclosion time (days after arrival)	Peak eclosion (days after arrival)	Number of pupae	Number of moths eclosed	Percent eclosion	Number of damaged /non-viable moths	Percent viable adults
September 6 shipment							
Total	7.9	7	113	99	87.6	18	71.7
Females	9.6	7	63	50	79.4	8	66.7
Males	6.2	14	50	49	98.0	10	78.0
September 12 shipment							
Total	7.7	6	224	164	73.2	30	59.8
Females	8.1	0, 11, 13	79	42	53.2	14	35.4
Males	7.5	6	145	122	84.1	16	73.1

Number of females eclosed per day.